Plant Pathology
EXTENDER

LATE BLIGHT: EVALUATING AND PURCHASING SEED TUBERS

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Rosemary Loria and Steven A. Slack

Department of Plant Pathology
Cornell University

Cornell
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New York State College of Agriculture and
Life Sciences at Cornell University
Department of Plant Pathology
Plant Science Building, Ithaca, NY 14853

Most seedborne pathogens can cause substantial reductions in yield or quality in the subsequent crop. However, some diseases such as late blight, ring rot and leafroll have the potential to spread quickly through the crop and are therefore considered to be particularly important. Since late blight was present in some seed production areas during 1994, there is a significant danger that some seed tuber lots sold for planting during 1995 will have tuber blight. The purpose of this bulletin is to help seed and commercial growers identify tuber blight, and to minimize the chances that late blight inoculum will be introduced into production fields on seed tubers.

Purchasing seed. The best strategy for obtaining quality seed is to know your seed grower. Visit the grower if possible and communicate your needs and concerns, including concerns about late blight. Did late blight occur in that seed lot or on that farm? Request a copy of summer field and winter test plot readings, which helps determine the health status of individual stocks. Many seed purchases are made through brokers, but they should also be able to provide this information. Regardless, reports on certified seed lots are public information and can be obtained from the seed certification agencies, though you must have the name of the grower and know the specific seed lot. Selected state certification agencies are listed in Table 1.

Seed contracts are agreements between buyers and sellers. Most contracts specify US # 1 Seed grade, which is good. However, the late blight tolerance is 1% under those standards. Purchasers can specify any level of stringency desired, such as "US. # 1 seed grade with 0% tolerance for late blight." However, there is no substitute for good communication. Be certain your seed grower or broker knows your concerns ahead of time.

Receiving seed. Always buy certified seed tubers and keep all documentation of the purchase, including the certification tags. Shipping point inspection is the final stage of seed certification and provides quality control on tuber grade. Be on site when seed is delivered and evaluate the seed carefully. If the seed appears unsatisfactory or questionable, stop unloading and call the shipper to initiate communication. You may want to call an inspector as well to document the extent of the problem. Fees for inspection vary because they include expenses incurred by the inspector. Contacts for inspections are listed in Table 2. Legally you must call the inspector within 8 hours of truck arrival and must reject the load within that 8 hour period. If the inspector cannot get there until later, then you have 2 hours to reject the load from the time of inspection.

Tuber blight identification. Lesions may or may not be visible at harvest. Established lesions do expand in storage and healthy tubers can be infected in storage if temperature and moisture are favorable. Therefore, inspections carried out late in the storage season may uncover lesions not visible at harvest. Late blight symptoms can be somewhat variable in appearance, depending on cultivar, time after infection and storage conditions. Late blight symptoms on tubers are pictured in Figure 1. Lesions appear as firm patches of brown to purple discoloration on the skin that become darker

and sunken with time. A diagonal cut through these lesions reveals a reddish brown, dry, firm rot that may extend somewhat into the cortex. Lesions have a granular appearance and spread unevenly into the tuber, particularly if the tubers have been stored for some time. Invasion by soft rot bacteria is common and results ina wet rot that can mask late blight sYmptoms.

Isolation of the late blight fungus may be necessary for an accurate diagnosis. For laboratory evaluation (there is a $40.00 fee per sample), please send tuber samples to:

Plant Pathology Diagnostic Laboratory
Department of Plant Pathology
360 Plant Science Building
Cornell University
Ithaca, NY 14853-5908

Remember that there are likely to be several sources of inoculum for late blight during 1995. Tomato is also a host of this fungus and there were many reports of tomato late blight in New York and elsewhere during 1994. Potato and tomato cull piles should be buried or otherwise destroyed. Volunteer potato and tomato plants should be eliminated whenever possible. Finally, the fungus can be distributed on tomato transplants, so these should be inspected carefully.

Table 1. Seed certification agencies in selected states. Information on agencies in other states can be obtained from the seed grower ..

New York:
Gloria Tubbs
Department of Plant Pathology
Cornell University
Ithaca NY 14853-5908
(607)255-7847 or 255-3284

Minnesota:
William Schrage
MN Seed Potato Certification
12 Hill Hall
Univ.ofMinnesota
Crookston MN 56716
(218) 281-6976

North Dakota:
H. M. EI-Nashaar
N. D. State Seed Department
Box 5012, University Station
Fargo ND 58105
(701) 239-7210

Canada:
Robert Longmoore
National Seed Potato Bureau
Agricultural Canada
K. W. NeatbyBldg.
960 Carling Avenue
Ottawa, Ontario KlA oC6
(613) 995-7900

Maine:
Terry Bourgoin
Division of Plant Industry
State House Station 28
Augusta ME 04333
(207) 289-3891

Wisconsin:
Dr. Robert Coltman
Wisconsin Cert. Seed Pro gam
P.O. Box 328
Antigo WI 54409
(715) 623-4039

Michigan:
Jeff Axford
4355 White House
Gaylord, MI49735
(517)732-4433

Table 2. New York State Department of Agriculture and Markets, Division of Food Safety and Inspection offices.

Albany:
Phone: (518)457-2090
FAX: (518)485-8986

Buffalo:
Phone:(716)847-3764

Riverhead:
Phone:(516)727 -3580
FAX: (516)727-7249

Rochester:
Phone:(716)427 -0200
FAX: (716)424-1248

Syracuse:
Phone:(315)487 -0852
FAX: (315)487-1064

Walden:
Phone:(914)778-3593
FAX: (914)778-3024

Figure 1. Late blight on potato tubers, showing the sunken dark external and the reddish brown internal decay.